Complete Summary

GUIDELINE TITLE

Prolonged cough in children.

BIBLIOGRAPHIC SOURCE(S)

Finnish Medical Society Duodecim. Prolonged cough in children. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 Jun 15 [various]. [7 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Jalanko H. Prolonged cough in children. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 Feb 22 [Various].

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Prolonged cough

GUIDELINE CATEGORY

Diagnosis
Management

CLINICAL SPECIALTY

Family Practice
Pediatrics

INTENDED USERS

Health Care Providers
Physicians

GUIDELINE OBJECTIVE(S)

Evidence-Based Medicine Guidelines collect, summarize, and update the core clinical knowledge essential in general practice. The guidelines also describe the scientific evidence underlying the given recommendations.

TARGET POPULATION

Children with prolonged cough

INTERVENTIONS AND PRACTICES CONSIDERED

1. History of symptoms and conditions in family or day-care
2. Examination of tympanic membrane with a pneumatic otoscope or by acoustic impedance testing (for suspected otitis media)
3. Ultrasonography of sinuses and sinus radiography (for suspected sinusitis)
4. Measurement of peak expiratory flow (PEF) values, including before and after exercise and after inhalation of sympathomimetic (for suspected asthma)
5. Medication trials with sympathomimetics or inhaled corticosteroids (for suspected asthma)
6. Patient education for the proper administration of the inhaled medicine
7. A bronchodilatation test or a free exercise test and auscultation of expiration (for suspected asthma)
8. Symptom diary (for suspected asthma)
9. Chest x-ray (for suspected foreign body)
10. Bronchoscopy (for suspected foreign body)
11. Specialist care examination by pH registration and, if necessary, endoscopy (for suspected gastro-oesophageal reflux).
12. Nedocromil sodium for prevention of exercise-induced bronchoconstriction

Note: Inhaled anticholinergic medications were considered but not recommended.

MAJOR OUTCOMES CONSIDERED

- Predictive value of diagnostic instruments
- Effects of nedocromil sodium on the severity and duration of exercise-induced bronchoconstriction (as measured by the maximum percentage fall in forced expiratory volume in one minute, maximum percentage fall in peak expiratory flow, time to recover lung function after exercise-induced bronchoconstriction)

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence reviewed was collected from the Cochrane database of systematic reviews and the Database of Abstracts of Reviews of Effectiveness (DARE). In addition, the Cochrane Library and medical journals were searched specifically for original publications.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogeneous results.
B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
C. Limited research-based evidence. At least one adequate scientific study.
D. No research-based evidence. Expert panel evaluation of other information.

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence [A-D] supporting the recommendations are defined at the end of the "Major Recommendations" field.

Basic Rule

- A child with continuous cough without an obvious cause should be referred to a paediatrician, so that investigations for allergy, pulmonary function tests, and possibly investigations for gastro-oesophageal reflux, bronchoscopy, and histological examination of airway mucosa can be performed.

Causes of Prolonged Cough

Recurrent Infections

- The cough is not caused by a single episode of disease but rather by frequently occurring new infections associated (e.g., with the beginning of day-care).
- A careful history of the symptoms and the conditions in the family and in day-care is often helpful.

An Infectious Focus

- Cough may be the only significant symptom of silent otitis media with effusion in small children or subacute sinusitis in older children.
- In sinusitis cough is often present during the night or in the morning. It is not merely the result of mucous "running down" to the throat, but both the middle ear and the sinuses have cough receptors that cause the cough (McCracken, 1986). Ultrasonography of the maxillary sinuses is a safe method also for repeated examinations of maxillary sinus fluid retention.
- The tympanic membranes should be examined with a pneumatic otoscope or by acoustic impedance testing. Mere visual inspection is not sufficient.
- Indications for chest radiography are considered carefully; repeated radiographic examinations during the same cough episode are usually unnecessary.

Whooping Cough, Mycoplasma, Chlamydia

- See the Finnish Medical Society guideline on whooping cough for the clinical manifestations.
- Cough associated with pulmonary mycoplasma and chlamydia infections may be prolonged and continue for weeks, in the manner of whooping cough.

Hyperreactivity After an Infection

- Bronchial hyperreactivity lasting for weeks is common after viral or mycoplasma infections. The most important symptoms are bouts of cough during exercise and in cold weather (McCracken, 1986; Henry et al., 1983).

Asthma

- Asthma manifests most often as difficulty in breathing arising from mucosal oedema and bronchospasm. The diagnosis is easy in such cases.
- Cough is another manifestation of bronchial hyperreactivity in asthma.
- The patients typically have cough during the night, during exercise, and in cold weather.
- It is important to evaluate the child's condition clinically on several occasions: What are the child's symptoms, how does expiration appear and sound (if the child is old enough, always auscultate forced expiration).
- All symptoms or their absence are recorded.
- In children above 5 years of age, a 1- to 2-week follow-up of peak expiratory flow (PEF) values with a simple instrument at home is a useful examination.
- A bronchodilatation test or a free exercise test can also be performed.
- Asthma should be suspected if
    - Wheezing is heard repeatedly on auscultation of expiration.
    - PEF values are lower than gender- and height-adjusted reference values.
    - PEF values are paroxysmally reduced by 20%.
    - PEF values decrease by 15% under exertion and increase by at least 15% after the inhalation of a sympathomimetic drug. For calculation see program for calculating PEF on the Finnish Medical Society Duodecim Web site.
- The frequency of symptoms and the circumstances in which they appear as well as the efficacy of a possible trial medication can be followed up by using a symptom diary.
- In small children a trial medication with inhaled corticosteroids is often the only possibility (König, 1981). Education for the proper administration of the inhaled medicine must be arranged.

A Foreign Body in the Respiratory Tract

- The patient may have had symptoms for weeks or months, without a foreign body being suspected.
- When taking the history of a coughing patient it is always worthwhile to ask specifically for the possibility of a foreign body.
- If the foreign body is radio-opaque (which is rare) the diagnosis can be made by chest radiograph. In other cases a bronchoscopy is indicated (Puhakka et al., 1989).

Other Causes of Cough

- Children subjected to cigarette smoke at home may suffer from continuous cough.
- Gastro-oesophageal reflux may associate with prolonged cough. The history may reveal a considerable tendency for rumination in infancy (Puhakka et al., 1989). The child should be examined in specialist care by using pH registration and, if necessary, endoscopy.
- Typical manifestations of psychogenic cough include hawking, speaking with a loud voice and coughing in specific situations. In 10% of children with prolonged cough the condition is psychogenic.

Related Evidence

- Nedocromil sodium prevents exercise-induced bronchoconstriction (Spooner, Saunders, & Rowe, 2002) [A].
- There is currently no evidence to support the use of inhaled anticholinergic medications in the management of prolonged nonspecific cough in children (Chang, McKean, & Morris, 2004) [D].

Definitions:

Levels of Evidence

A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogeneous results.
B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
C. Limited research-based evidence. At least one adequate scientific study.
D. No research-based evidence. Expert panel evaluation of other information.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Concise summaries of scientific evidence attached to the individual guidelines are the unique feature of the Evidence-Based Medicine Guidelines. The evidence summaries allow the clinician to judge how well-founded the treatment recommendations are. The type of supporting evidence is identified and graded for select recommendations (see the "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate diagnostic investigations into the cause of prolonged cough in children

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2000 Apr 17 (revised 2004 Jun 15)

GUIDELINE DEVELOPER(S)

Finnish Medical Society Duodecim - Professional Association

SOURCE(S) OF FUNDING

Finnish Medical Society Duodecim

GUIDELINE COMMITTEE

Editorial Team of EBM Guidelines

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Author: Editors

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

This guideline is included in a CD-ROM titled "EBM Guidelines. Evidence-Based Medicine" available from Duodecim Medical Publications, Ltd, PO Box 713, 00101 Helsinki, Finland; e-mail: info@ebm-guidelines.com; Web site: www.ebm-guidelines.com.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on August 28, 2001. The information was verified by the guideline developer as of October 26, 2001. This summary was updated by ECRI on December 9, 2002. This summary was verified by the developer on April 2, 2003. The summary was updated most recently on October 1, 2004.

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